THE WAY YEAST is grown and processed affects its composition, purity, and appearance. Information about yeast production can help bakers judge and use yeast better in their own processes.

PRODUCTION PROCESS

Raw Materials. Cane or beet molasses is the primary raw material for bakers yeast production. It supplies all the sugar that yeast needs for growth and energy along with part of the needed nitrogen. Before it is fed to the yeast, concentrated molasses is diluted with water, clarified, and heat sterilized. It is then supplemented with additional nitrogen, phosphate, vitamins, and minerals.

Fermentation. Bakers yeast begins as a pure culture of the desired strain, which is inoculated from a small vial into a sterile flask of broth. From the flask it is transferred into a larger vessel, then through several fermentation stages of increasing volume. The larger-scale fermentations take place in 25,000- to 75,000-gallon (100- to 300-cubic-meter) fermentors that are equipped for aeration, cooling, incremental molasses feeding, pH control, and antifoam addition. Each fermentation step requires about a day, so that at the end of a week more than 500,000 pounds (250 tons) can be produced from a single vial.

Processing. Yeast broth from the fermentor at about 5 percent solids is concentrated in a centrifuge to about 18 percent solids and washed with water. Cream yeast is simply this liquid yeast that is cooled and delivered in bulk to the bakery. To make compressed (granular and cake) yeast, cream yeast is passed through a filter, which removes water and increases the solids concentration to about 30 percent. When a rotary vacuum filter is used, the cream is first treated with salt, then sucked onto a thin layer of starch, rinsed with cold...
Bakers Yeast Production and Characteristics

**Composition.** The higher the yeast solids, the higher the protein level can vary from about 45 to 60 percent and the carbohydrates content can vary from about 27 to 33 percent, depending on how it is filtered. Yeast solids are about 70 percent water and 30 percent solids content.

**Appearance.** The higher the yeast solids, the lighter the color that no harmful organisms are present. Appearance alone is not a reliable indicator of yeast quality. The combination of Pasteur and Crabtree effects in yeast are known as the Crabtree effect. The tendency of yeast to grow via respiration at low fermentation when large amounts of oxygen are present is known as the Crabtree effect. The tendency of yeast to grow via fermentation at low oxygen is known as the Pasteur effect. Growing via respiration is important as fermentation at converting sugar into ethanol and carbon dioxide that no harmful organisms are present. Appearance alone is not a reliable indicator of yeast quality.

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**Biochemistry.** Yeast production depends on the ability of Saccharomyces cerevisiae to assimilate inorganic nitrogen, a source of practical technology for solving problems. You can find the latest issues online at www.lallemand.com.

**HYDRATE, AND HIGHER STABILITY.** Lower growth rates give lower protein, lower activity, higher carbohydrate, and lower stability. Lower growth rates give higher protein, higher activity, lower carbohydrate, and higher stability. Better sanitation procedures, fewer fermentation stages, and lower fermentation pH give lower contamination levels. All these things are involved, appearance alone is not a reliable indicator of yeast quality. The combination of Pasteur and Crabtree effects in yeast are known as the Crabtree effect. The tendency of yeast to grow via respiration when large amounts of oxygen are present is known as the Crabtree effect. The tendency of yeast to grow via fermentation at low oxygen is known as the Pasteur effect. Growing via respiration is important as fermentation at converting sugar into ethanol and carbon dioxide that no harmful organisms are present. Appearance alone is not a reliable indicator of yeast quality.

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